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ORIGINAL ARTICLES

PRE-OPERATIVE ESTIMATION OF SURGICAL RISK*

By ALBERT H. MILLER, M.D.

131 WATERMAN ST., PROVIDENCE, R. I.

After the operation has been successfully completed, it is a simple matter to discuss the degree of risk which the patient has undergone. To determine the surgical risk before the operation has been performed is more difficult. It involves the skill of the surgeon, the character of the anesthesia, the severity of the operative procedure and the condition of the patient. Pre-operative estimation of surgical risk depends on a study of the behavior during and after operation of patients to whom certain tests have been applied before operation.

Blood Pressure Tests: Of the various tests which may be utilized in estimating the patient's resistance to the strain which inevitably accompanies any surgical operation, the blood pressure is the most valuable. It may indicate nephritis, myocarditis, aortic regurgitation, or the presence and degree of traumatic shock. It is the most certain of the tests measuring resistance to strain. The systolic and diastolic pressures are taken by the usual auscultatory method. The pulse pressure is found by subtracting the diastolic from the systolic pressure. The blood pressure index is a fraction having the pulse pressure for numerator and the diastolic pressure as denominator. With healthy patients, this index is very constant and has a value of ½ or 50/100. The index is lowered in myocarditis and in traumatic shock. It is increased in aortic regurgitation, in toxic goiter and in nephritis.

Moots' Blood Pressure Rule: A blood pressure rule for estimating surgical risk has been formulated by Moots. If the blood pressure index is between 25 and 75, the case is operable. If it is less than 25 or greater than 75, the case is inoperable. To test the accuracy of this rule, I once tabulated 1000 routine cases. In the operable cases, the mortality was 3.23%; in the inoperable cases, it was 23.07%. Henry Ruth, of Philadelphia, in a similar tabulation, found the mortality in operable case, 0; and in inoperable cases, 40%. Moots' rule is of distinct value.

Energy Index: The energy index is a development of the blood pressure index. It is determined by multiplying the sum of the diastolic and systolic pressures by the pulse rate per minute. Disregarding the three last figures of the result, the normal energy index is 16. It represents the energy expended by the circulatory system in one minute. In Ruth's series, every case requiring extra operative or post-operative care had an abnormal energy index. The normal limits are 12 to 18.

Breath Holding Test: Next in value to the blood pressure is the breath holding test. At the end of a normal expiration, the patient closes the mouth, pinches the nose and holds the breath as long as possible, while the observer keeps time with a watch. The normal breath holding time is 25 seconds or more. Diminished breath holding time indicates lack of cardiac compensation or acidosis. A breath holding time less than 25 seconds suggests incomplete cardiac compensation. In the presence of acidosis the breath holding time may be reduced to 5 or 10 seconds. In Ruth's series of cases, circulatory depression or shock never occurred when the breath holding time was normal.

Basal Metabolism: In goiter, the basal metabolic rate indicates the danger from thyro-toxicosis. With a basal metabolism of plus 50, operation must be approached with caution. At plus 100, a serious operation cannot be safely performed. The importance of basal metabolism in the extimation of surgical risk is generally underestimated. Not infrequently severe thyro-toxicosis develops after such operations as hysterec-

*Read before the Providence Medical Association, February 3, 1930.

tomy or breast amputation and sometimes the patient dies as a result. When there is any reason to suspect thyro-toxicosis, the basal metabolism should be checked before operation.

X-ray: In determining the size and position of the heart and in detecting pleural exudates and pulmonary consolidation, the X-ray gives more exact results than can be obtained from the physical examination. The X-ray can thus be of great value in estimation of surgical risk. In some children's hospitals, a routine X-ray of the chest is taken before every operation in order to test the condition of the thymus gland. There is no evidence that enlargement of the thymus renders operation specially dangerous. The deaths which have been reported as due to status lymphaticus have generally been due to overdosage of the anesthetic. The practice of making an X-ray examination of the thymus before operation is therefore generally disapproved.

The Blood Picture: Deviation from the normal red and white blood counts and lowering of the hemoglobin index often provide information useful in making an evaluation of surgical risk. If the hemoglobin is below 70%, operation must be approached with caution, although serious operations have been successfully performed when the hemoglobin was at 50%. Colorimetric blood chemistry is frequently useful in estimating surgical risk. The normal urea nitrogen is 12 to 15 mg. per 100 cc. The normal creatinin reading is 1 to 2 mg. per 100 cc. When the urea nitrogen is above 30 and the creatinin is over 3, the patient shows serious lack of protein excretion and the operative prognosis is grave. The normal blood sugar is 90 to 120 mg. per 100 cc. In severe diabetis it rises to 300 to 1200 cc. The use of insulin has changed the complexion of surgery on diabetics. A diabetic patient free from acidosis, with an ample supply of alkaline salts and water in the body, a blood sugar within normal limits and in a normal state of nutrition is as good a risk as a non-diabetic patient. With intelligent use of insulin, no patient should die from diabetic coma.

Tests for Acidosis: The degree of acidosis may be measured by taking the carbon dioxide combining power of the blood plasma. The normal figure is from 53 to 75 cc. per 100 cc. of plasma. In acidosis the carbon dioxide combining capacity falls far below normal. A simple method of measuring acidosis is provided by an estimate of the alveolar carbon dioxide. The Fredericia technic is simple and the result is sufficiently accurate. The normal figure is 5.5%. In acidosis this figure is greatly reduced.

Excretory Power of the Kidneys: The excretory power of the kidneys is estimated by one of the phenolsulphonephthalein tests. With the intramuscular test, the normal excretion for the first hour is 40 to 60%; for the second hour, 20 to 25%; giving a total of 60 to 85%. When the two hour reading is below 20, the kidney function is gravely impaired. With the intra-venous test, a normal kidney excretes 1% of phenolsulphonephthalein per minute. Less than 5% in a fifteen minute period indicates greatly impaired kidney function.

Blood Sedimentation Test: In suspected infection, the blood sedimentation test is valuable. The blood sedimentation tube has a diameter of 5 mm. and is 6.5 cm. in height. It is marked at the 1 cc. level and at 18 mm. below this point. .8 cc. of blood is mixed with .2 cc. of 5% sodium citrate solution and placed in the sedimentation tube. The time is taken at the beginning of the test and when the line of sedimentation reaches the 18 mm. point. The normal time is 184 minutes. In puerperal sepsis the time may be reduced to 15 minutes. A sedimentation time of two hours rules out infection. 60 minutes is the lower limit of safety. At 45 minutes operation should not be attempted.

Coagulation Time: The coagulation tube is exactly 8 mm. in diameter. 1 cc. of blood is drawn and placed in the tube. The normal coagulation time is 5 to 8 minutes. This test was judged to be important in patients with jaundice and suspected hemophilia. It was formerly the routine practice before all tonsil operations but is rapidly being abandoned as inefficient. Hemorrhage occurs with equal frequency in patients who have a normal coagulation time.

The Routine Examination: Routine examination of patients who are to undergo surgical operations includes a study of the history, inspection of the patient, a physical examination of the heart and lungs, an analysis of the urine and a record of the blood pressure. From the history, we learn

the age, remembering that few patients who are over 50 are in perfect physical condition or able to endure the strain of an operation as well as those in middle life. We note the time that the patient has been confined to bed, because protracted illness reduces resistance. We look for signs of malignancy, for functional cardiac disorders, for symptoms of cardiac decompensation and for a history of vomiting. On inspection we note any deviation from the normal color, as pallor, cyanosis, jaundice or the cachexia of malignant disease. We note the state of nutrition, whether the patient is unduly fat or lean. The fat woman from the circus and the midget are both poor operative risks. The midget has a susceptibility to general anesthetics and may readily inhale an overdose. The excessively fat woman is a poor risk and probably succumbs after a major operation. We take note of abdominal distension, which may result in vomiting during operation. Goiter or a tendency to exophthalmos must not be neglected. We notice the character of the respiration. Orthopnoea contra-indicates any but the most urgent and speedy operations.

From the physical examination we learn the size and position of the heart and the character of the heart sounds. We remember that heart murmurs are usually less important than the strength of the sounds and the state of compensation. Any abnormality found on examination of the lungs may be of importance in deciding on the nature of the anesthetic and in evaluation of the operative risk. In the urinalysis we look for the presence of albumin and casts, of sugar and of acetone. In taking the blood pressure we remember that an abnormal blood-pressure index is of greater significance than a high systolic or diastolic pressure. Any deviation from the normal blood-pressure reading must be carefully considered.

Evaluation of the Risk: From the routine examination we may decide that the patient is in satisfactcry condition or that he presents a handicap. To determine the degree of the handicap further tests may be indicated. When we have estimated as closely as possible the patient's condition and his ability to stand operative strain, we balance this condition against the character of the operation and the anesthetic. None of these factors is fixed. The patient's condition may be improved by treatment, by the use of such remedies as rest, diet, insulin, transfusion or digitalization. The anesthetic may be modified to suit the patient's condition. The operation may be planned with reference to the patient's handicap. Such consideration is far removed from the technic which subjects every old lady with a lump in her breast to a radical breast amputation under any anesthetic which may be handy, regardless of her chance of immediate recovery and of spending her remaining life in comfort. Unessential operative details may be omitted. Operative time may be reduced by thorough preparation. Attention to posture of the patient during operation and to operating room temperature may swing the balance away from fatality. Few patients, whatever may be their condition, fail to recover from short operations, carefully carried out.

Who Should Make the Evaluation of Risk? The examination of the patient and estimation of surgical risk should be the first thing considered when advising a surgical operation. The examination and estimation of risk should be made before the operation is advised. The pre-operative evaluation of surgical risk, which has been developed largely by anesthetists, should become the problem of the physician or surgeon who first advises surgical operation. In many clinics no pre-operative examination of the patients is made. In others, a careful examination is made but the data of this examination is not consulted at the time when the operation is advised and is not available in the operating room at the time of operation. Frequently the evaluation of risk is made immediately before the operation or on the evening preceding after the patient has entered the hospital and all preparations for the operation have been made. Too often, after the operation has been arranged for and the patient is in the hospital, mentally prepared for the ordeal, it is found that he has some condition which renders the operation dangerous and recovery doubtful. Under these conditions the temptation to take unwarranted chances and to let the operation go on is too great to be humanly resisted. The results are sometimes unfortunate and regretted. Reason would indicate that the pre-operative examination and estimation of surgical risk should be made by the physician or surgeon who advises the operation or should be available for him before the operation is advised.

A CASE OF LEONTIASIS OSSEA*

By

HENRY MCCUSKER, M.D.

106 WATERMAN ST., PROVIDENCE, R. I.

Leontiasis ossea is a rare disease. No matter how much is included under that name, it is still a rare disease. In spite of the vast number of cases passing through our hospitals and in our combined practices there has been no previous presentation of the subject before this society—insofar as I am aware. A careful search of the literature shows few cases of this disease. The best article on leontiasis ossea is by R. Lawford Knaggs in the *British Journal of Surgery,* in 1923. This important article is beautifully illustrated with cuts of pathologic specimens and with photographs of cases but shows no X-ray illustrations. He reviews the cases previously reported by Virchow, Horsley and others. He divides the cases into two groups: (1) cases of very chronic periostitis, spreading slowly from bone to bone in the cranium. He termed these "Creeping Periostitis of the bones of the face and skull" and states that "there can be no question the disease begins in the nasal fossae or the sinuses"; (2) cases of diffuse osteitis of bones of face and skull, "almost certainly caused by toxins due to dental sepsis."

I am not going into the discussion as to relationship of leontiasis ossea with Paget's disease. I only wish to present to you a case which I believe shows certain distinctive features sufficient to warrant it being classified under the heading of leontiasis ossea.

Before detailing my case of leontiasis ossea I shall show two lantern slides of Paget's disease in a man who had a minor injury to his pelvis—the X-rays of which region show the changes typical of Paget's. The X-rays of the skull of this man also show changes typical of Paget's disease. This man is a "high pressure" business man and had no complaints referable to head, spine, or extremities, although X-rays of his skull, femora, tibiae, and humeri showed fairly advanced Paget's disease.

*Read before the Providence Medical Association, February 4, 1929.

The case of leontiasis ossea of which I am speaking is one I saw on November 7, 1928. A woman, age 52, married, born in Russia.

Family History: No deformities in family. Parents died in Russia, father of shock; mother of appendicitis; both at 62. One sister living and well at 50. Several brothers and sisters in Russia of whom she knows little. Husband, age 52, living and well—a fruit peddler. 7 children living and well. Catamenia two years ago. Denies venereal infections.

Past History: Patient is not acquainted with facts concerning infancy. At age of 5 or 6 years the right side of her face or jaw was accidently struck by the end of a wooden stick her mother was using to take bread from the oven in Russia. The face became swollen and required medical care for a long time. Her mother was quite concerned about the injury and the resulting deformity of the right lower jaw which persisted. Nothing further is noted about the facial deformity until just previous to her marriage at age 21, when her present husband "wondered if she had a goitre under the right jaw." Deformity was not given consideration again until 15 years ago (age 37) when a friend who had not seen the patient for a long time inquired if the patient had an abscess on the right side of her face. Patient and family have noticed no recent increase in the size of jaws or skull. There has been no abnormal increase in size of her fingers, hands or feet.

Present Illness: 10 years ago she was operated for appendicitis. Surgical mumps followed and she was "quite sick." Immediately following she had an abscess over her left mastoid region requiring incision and drainage. "Never felt well afterwards—headaches and noises in the head."

8 years ago had a "nervous breakdown" following a death in her family and news of the killing of relatives in Russia during the war.

3 years ago a dentist extracted the right lower wisdom tooth under gas-oxygen for the relief of head noises but the extraction was immediately followed by more severe pains over the right side of the head, necessitating confinement to bed for 3 months.

Headaches and head noises became gradually worse and she has consulted many doctors for relief. Recently X-rays were taken and reported as showing Paget's disease of the skul. X-rays

of the pelvis, entire femora, tibiae and humeri reported as showing no evidence of bony disease.

Chief Complaint: "Big cracking noises" from right side of head (pointing to right occipital area) to front (pointing to frontal.) Cracking feeling relieved only by tight bandage around head. Steady "chug-chug-chug" like a hammer, worse on right side. Burning feeling on top of head. Dizziness while in bed. Formerly able to do much housework, now able to do little.

Physical Examination:

Height: 5 feet 3 inches, (no change in height during adult life.) Weight: 156½ lbs.

Gait: There is no disturbance in station or gait.

Face: Shows marked asymmetry, the right side showing greater development than the left. The lower jaws are visibly enlarged and on palpation feel thickened. (Figure 1. Case 1.)

Teeth: No toothaches. No carious teeth, but several metal fillings.

FIG 2. CASE 1.

Postero-anterior X-ray of skull, showing bony enlargement of lower jaws and increased density in the posterior portion of the skull.

Ears: Right Tinnitus.

Eyes: Wears glasses for past 18 years. Vision not growing worse. Has not needed to change glasses during past 4 years but did change them 6 months ago. Pupils, left larger than right.

Head Measurements: Bi-superior maxillary diameter: 9½ cm. Bi-frontal diameter: 14¾ cm. Glabello-Occipital diameter 18¼ cm. Circumference Cranium around forehead: 56¼ cm. Circumference occipit-superior maxillary: 59 cm. (under nose—above ears.) Oblique diameter right superior maxillary—left mastoid 13¼ cm. Oblique diameter left superior maxillary—right mastoid 14 cm.

Spine: Shows no deformities. Back motions are good.

Extremities: No bowing of arms or legs. Pelvis appears normal.

Blood Wassermann: Negative.

Urine: Negative for albumin, sugar, casts.

X-ray Examination of the jaws showed marked thickening and general enlargement of both lower jaws, more marked on the right side. There is irregularity in bone density especially throughout the right mandible where there are several areas

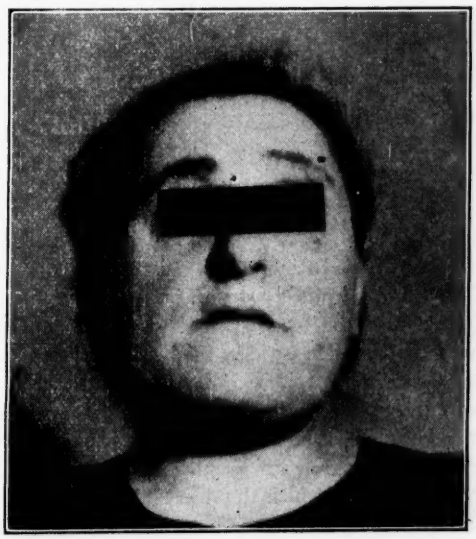

FIG 1. CASE 1.

Enlargement of both lower jaws, more marked on the right side.

of increased density, and several areas of slightly diminished density.

X-ray Examination of the skull does not show the "kinky hair" appearance seen in advanced Paget's but does show areas of increased density in the posterior portion of the skull. The right antrum is smaller than the left and shows an increase in density. (Figure 2. Case 1.)

X-ray Examination of the hands, arms, legs and pelvis show no changes suggesting Paget's disease.

Summary: Leontiasis ossea and Paget's disease manifest different clinical signs. In Paget's disease the head, spine, and long bones are involved—often with deformities. Disfigurements and distortions of the trunk and extremities. Cranial nerve involvement is rare. The disease usually occurs in the second and third decade of life. Leontiasis ossea usually begins in early childhood and the name is limited to cases which show a "lion-like" countenance, without involvement of the spine or long bones. Cranial nerve symptoms are more apt to be present as it primarily involves the bones of the face. In the case reported there was the lion-like countenance manifest, and X-ray evidence of involvement of bones of face: and no bone changes of pelvis, long bones, or spine.

A CASE OF LEONTIASIS OSSEA, WITH OPTIC ATROPHY*

By HARRY C. MESSINGER, M.D.
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Optic atrophy is found in a large proportion of cases of Leontiasis ossea. In recent years the X-ray discloses differences in the distribution and character of the bony growth so that eventually even this rare disease may be divided into two or three subdivisions. If we define the disease as a bony overgrowth affecting the bones of the skull and face, the rest of the skeleton being unaffected, the case I am about to describe belongs to the group in which the disease begins in childhood, is at first unilateral, spreads by contignity until it affects both sides almost symmetrically, affects the base of the skull and some of the bones of the face, leaving the vault relatively untouched. It is in this group that optic atrophy is common. It is considered that the atrophy is more from distortion and stretching of the nerves than from pressure of the bony overgrowth on the nerve at the optic foramen or in the orbit.

The disease is of interest in that its manifestations may invite consideration by the internist, the surgeon, the rhinologist, the neurologist, the orthopedist, pathologist and ophthalmologist. Some of the medical men who have written about it are Malpighii, Virchow, J. J. Putnam, W. W. Keen, and E. A. Locke. The two hypotheses advanced as to its etiology are that it is an expression of endocrine dysfunction or is a chronic bone infection.

January 3, 1929. A 14-year old girl came to the Out-Patient Eye Department of the Rhode Island Hospital because of poor vision in her left eye. For about one year her family had noticed that the left side of her head and face was getting larger and they attributed this to a fall. When she was three years of age she struck the left side of her forehead violently against the ground. She said she had had a "lump" ever since. She has had no headache, deafness or other complaint.

F. H.: Father's mother and father living. Mother's father living. Mother's mother died 17 years ago of "shock." Her mother who was "short and stocky," died two years ago in childbirth, always well until then. Her father is tall, living and well. There are two sisters and two brothers living and well. One brother died at six months.

P. E.: She is short, of medium build, dark hair and clear complexion, mentally alert and answers readily and intelligently. There is enlargement of the left side of the head, the left forehead and angle of the jaw are prominent. The circumference of the head, just above the eye brows, is 22 inches. The left eye is below the level of the right and more prominent. The left palpebral fissure is enlarged especially below and outward, (as though the skin were stretched.) The left pupil is dilated and reacts very faintly to light and accommodation, but has a prompt and active consensual reaction. The right pupil reacts normally to light and accommodation. Consensual reaction is very faint. The lids, conjunctiva, cornea, iris, and media appear normal. The left disc is pale, the edges are slightly irregular, it is flat, the retinal vessels are small and nearly straight, few branches

*Read before the meeting of the Providence Medical Society, February 4, 1929.

are seen, there is no juvenile reflex and the retina is paler than normal.

In the right eye there is almost the same picture, except that the disc margin is sharp and there is more color. The difference in appearance is slight. Vision O. D. 0.5 no appreciable refractive error. Vision O. S. faint light perception. The field in the right eye is concentrically narrowed, the blind spot is symmetrically enlarged about 5 degrees radially.

There is nasal obstruction, the teeth are sound, the alveolar processes on the left side are large above and below. From the rear the enlargement of the lower jaw is noticeable. The thyroid is not enlarged. There is a slight hesitancy and tremor of the right hand in the pointing test. Her posture is good, the extremities are symmetrical and of proper proportions. There is no bowing of the legs. Heart, lungs and abdomen negative.

X-ray examination, chest, spine, pelvis and both legs show no variation from the normal. The skull shows nothing in the left frontal and anterior parietal region. There is marked increase in density in the bones about the base of the skull and posterior region of the orbit. The left mandible is increased in size and has the same mottled character as seen in the calvarium. The appearance suggests that seen in Paget's disease but the distribution and age of the patient make this diagnosis somewhat doubtful.

Films of the trunk and all the extremities showed no abnormality. Thymus not enlarged.

Examination of sinuses. The frontal sinuses are obliterated by overgrowth of new bone, the left antrum has irregular borders due to the same cause. The ethmoidal areas also are obliterated.

Nose and Throat: Hypertrophied tonsils. Deviation of septum to the right. Both inferior turbinates hypertrophied. No pus in either nostril.

The patient was admitted to the Hospital and the following tests made:

Wasserman: Negative.

Hgbn. 70% Red cells: 4,550,000. White cells: 8,800.

Diff. Count. P. M. N. 71, P. M. E. 3, P. M. B. 0, SL + LL 22.

L. M. 4. Myel. 0. Transitional 0.

Blood Chem. Urea 11 mg. Sugar 115 mg.

Urine normal including fixation test.

Bence Jones Test negative (positive in multiple myelomata.)

Spinal Fluid: Wass. 0. Alb. 1. p. t. Globulin 0.

Cell count: Negative.

Initial pressure 140 Bil. jug. comp. 270. Left jug. comp. 180. Right jug. comp. 185. Final 135. Amount removed 15 cc.

Basal Metabolism: —10.50.

FIG 2. CASE 2.

Lateral X-ray of the skull, showing bony overgrowth anteriorly and at the base. All the bones of the body were X-rayed. Only the skull showed changes from the normal.

FIG 1. CASE 2.

The left eye is blind. The left side of the face is larger than the right.

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EDITORIALS

A NEW HOSPITAL

Near the present time the Providence City Hospital will open a new building for the care of those who are mentally ill or suffering from diseases of the nervous system—a department of Neuro-Psychiatry. Probably no division of hospital activities—taking the country as a whole—has been so neglected, and it is both interesting and most gratifying to see this work undertaken as one department of a hospital rather than in a separate institution. Undoubtedly large specialized hospitals are an economic necessity, but when the person who is mentally ill approaches the hospital by travelling up the same path and into the same sheltering doors beside his neighbor who is afflicted with a skin disease or heart troubles he is going to be largely freed from the stigma of being touched by the "moon." One of the greatest needs of the mentally sick, is to be recognized by the community as such, and not looked upon as social pariahs. Certainly fear of insanity is a very common thing and it would appear that the banishing

of such a fear is a great need. A municipality which cares for its mentally sick with the same interest and at the same place where it cares for its other sick is doing a progressive work. Patience and kindness are bestowed freely upon the individual whose inheritance has given him obvious physical infirmities but the community at large is very much inclined to simply isolate one whose mentality deviates to any great extent, and derision or fear takes the place of the patience and kindness which are extended to those whose physical infirmities are great but whose mentality remains calm. That progress is being made rapidly, in altering the viewpoint of the public toward the mentally sick, is evidenced by the splendid work of the Society for Mental Hygiene. The name itself has a kindly sound with never a suggestion of the "moon." The present name—State Hospital for Mental Diseases—is well and kindly worded, and there people go for treatment and care with much less dread than in former years. Much of its fine work would be untouched were it still a lunatic asylum.

When space is available the division of Neuro-Psychiatry of the Providence City Hospital will undoubtedly help with the acute mental problems of the outlying townships, and their physicians might well urge their respective towns to include in their appropriations small amounts of money to be available for Directors of Public Aid so that under new and much more flexible commitment laws a patient could, without undue publicity, and no court action be treated for a study period in this new and splendid hospital. Such funds should be readily available, for almost irreparable damage may occur very rapidly in the turbulent years of adolescence. Such expenditures in selected cases would undoubtedly prove good economy for years or a lifetime of public support are very expensive even in one case. It is not at all improbable that the City of Providence will make a large financial saving over a period of years by treating its acutely mentally ill patients promptly and kindly.

Few cities have undertaken such a hospital and Providence is to be greatly commended. The record of the City Hospital has been such since its inception that the best possible work may be expected in this new task of municipal care for the mentally sick.

MENTAL HYGIENE AND THE "BALLYHOO"

While it is usually true that "it pays to advertise" and that in order to render many new movements and methods successful they must be brought squarely into the limelight, it is also true that in certain fields the reverse is the case. This applies to many phases of medical work. Success in the early recognition of cancer, for example, demands that the possibility of malignancy must be kept in the public eye, in order that those suffering from the early stages of malignant changes may be made suspicious and seek advice before the process becomes too far advanced to allow of a favorable result of treatment. Mental hygiene, so called, has, on the other hand, been oversold. There have been, in some places, too many speeches and too little honest individualized work by trained physicians. The field of treatment of mental disorders, especially that of the slighter and more easily controlled difficulties, is one in which generalizations from the platform are of little or no value and may be positively harmful especially when advanced by over-enthusiastic and under trained individuals to eager, impressionable and badly informed listeners. The failure of the "mental hygiene program" of several Universities has been due directly to the "ballyhoo." This has been because those in charge, though people of the highest ideals and intentions, have been constitutionally unable to do things without public acclaim. The announcement of their plans and the labelling of their work as "mental hygiene" has in itself raised a barrier, heightened by lectures and all public statements, which has prevented them from reaching the very people in need of their aid. To be successful such work must be carried on quietly, individually and on the plane of simple medical aid by a competent specialist without lectures and labels of any sort. When this is done the results are as gratifying as those in any field of medicine.

"THE HAND OF ESAU"

The Better Health Bureau has recently reorganized and is now, according to reports, desirous of improving the health of the citizens of Providence, Rhode Island. Once before the Bureau had a similar ambition but were forced to give it up because

of certain legal technicalities which would now probably be corrected.

Just why Providence should be so assisted is not entirely clear. The care of health in Rhode Island is by no means perfect. The medical profession is probably average and the health officer of Providence is about the most noted one in public health work.

Isn't it just possible that some other city might need the efforts of the Better Health Bureau more than does Providence?

THE CARE OF INFECTED EYES—FROM THE LABORATORY VIEWPOINT

H. Everett Smiley, M.D.

Providence City Hospital, Providence, R. I.

All infected eyes should be cultured upon a suitable medium, preferably blood-agar. It is not sufficient to depend upon examination by direct smear alone. It is, of course, important that the culture be taken very carefully, and before any antiseptic has been introduced into the conjunctival sack. For this purpose a sterile swab may be used, although some prefer a sterilized platinum loop, particularly if there is little pus.

So many direct smears show little else but pus cells that complete information can not be obtained by that method alone. Furthermore, the complete resources of the laboratory have not been made use of. Of course the principal organism being searched for is the gonococcus, but it is only very rarely that the classical picture of Gram-negative, intracellular diplococci is seen. Instead, the picture often shows pus cells and scattered extracellular organisms which are very difficult to identify. A negative report does not, of course, definitely rule out gonorrheal infection, but it is impossible to determine by morphology alone the type of organism that is causing the trouble. It is to correct this fault that a culture should be taken. Blood-agar is a suitable medium for it will grow saprophytes, such as staphylococci, as well as the more pathogenic organisms such as gonococci, streptococci, pneumococci, and influenza bacilli.

Recently at the Providence City Hospital Laboratory, we have been culturing some of the infected eyes, and in every case that culture has been resorted to a satisfactory explanation for the presence of the pus has been obtained. It certainly must be comforting to any patient to know that his eye infection is due to a staphylococcus, or in fact any other organism, rather than wonder and worry whether the cause is the gonococcus.

If the culture method is not resorted to, and the examination of the smear is inconclusive, the treatment is simply empirical and symtomatic, while if the infected organism is known it might be possible to practice more specific measures, as for example anti-pneumococcus serum, or anti-streptococcus serum, or an autogenous vaccine.

CASE REPORT

RHODE ISLAND HOSPITAL

Clinical-pathologic Conference

May 14, 1929

Case reported by Dr. Turner.

W. W., age 7, male, white, single. Admitted February 25, 1929.

C. C.: Pain in rectum.

P. I.: About January 1st had "grippe" associated with severe sore throat, which was covered with white specks. This was followed by pain in right ear. This was not lanced. Boy then complained of pains in first one elbow and then in another. Then in thighs, but not in the back. This lasted for about one week when all of above symptoms cleared up. He then complained of pain and burning and itching of rectum. This continued for about two weeks before admission. Has had fever off and on throughout illness. Appetite good. No vomiting or colic. Bowels kept open. Normal color, except for small amount of blood on day before admission. Ever since ear trouble has been getting increasingly sallow and has lost weight.

F. H.: Negative. No familial diseases.

P. H.: Normal in infancy. Measles at three years. Has frequent sore throats and colds. Otherwise P. H. essentially negative.

Physical Examination

Well developed and slightly emaciated very anaemic young body.

Head, Eyes, Ears: Ext. negative.

Throat: Tonsils sl. injected and covered with white exudate. Post cervical glands on left palpable.

Heart: Not enlarged. Systolic murmurs at apex.

Lungs: Question of dullness left post. No rales or changes in breath sounds.

Abdomen: Negative.

Extremities: Slight emaciation. Pain in knees on rotation of thighs.

Reflexes: Knee jerks equal and active.

Local Exam.: Tenderness on pressure over anal sphincter. No swelling.

Operation: February 27, 1929. "Curettage of rectal ulcer."

Extensive ulceration of posterior lateral side of rectum inside of anus. Grayish base ¾ inch across triangular in shape. Ulcer curretted and anus packed with iodoform gauze. Specimen sent to Laboratory. Transfusion 200 cc. oxolated blood 3/16/29. Transfusion 200 cc. oxolated blood 3/25/29.

Laboratory Findings

Examination of Urine: Negative.

2/28/29: Blood culture sterile.

2/28/29: Culture (throat) Pneumococci (predominating organism) Michoccus Catarrholis. Few Bacilus resembling K. L.

2/26/29: W. B. C. 750. R. B. C. 2,480,000. Smear, achromia. Polys 60%. Lymph. 40%.

2/28/29: W. B. C. 750. R. B. C. 1,960,000. Hg. 37%. Smear achromia. Polys 16%. Lymph. 85%. Color index .92. Report of smear: Polys 38%. Small Lymph. 42%. Large Lymph. 12% Mylocytes 8%. Some anisocytosis and Poikilocytosis.

3/1/29: W. B. C. 1,050.

3/2/29: W. B. C. 2,150. R. B. C. 1,170,000. Hg. 21%. Coagulation time 4½ minutes. Bleeding time 2 minutes.

3/13/29: Smear-Slight Achromia. Anisocytosis Poikilocytosis-Few microcytes.

3/20/29: W. B. C. 2,150. R. B. C. 1,125,000. Hg. 24%. Only few platelets seen.

Stool

3/18/29: Negative for Occult blood, parasites and ova.

3/20/29: Occult blood present. Negative for parasites and ova.

3/23/29: Occult blood present. Negative for parasites and ova.

3/1/29: X-ray treatment.

3/14/29: X-ray of chest. No reports.

3/19/29: X-ray of Mastoids. Sclerosis.

Progress Notes

3/28/29: Patient transferred to I Medical Service.

2/28/29: Cervical, inguinal and axillary glands palpable. Spleen palpable on deep breathing.

3/3/29: General condition improved. Patient on liver diet. Smear from tonsil reported.

3/6/29: Temp. approaching normal, gradual improvement.

3/9/29: Pallor exist despite liver and iron therapy.

3/12/29: General condition same.

3/15/29: Patient complaining of ear ache. Examination by Ear department reports normal drums.

3/18/29: Transfusion done on 16th. Patient seems slightly improved. Ear ache continues. Question of mastoid tenderness. Re-examination reveals no abnormalities. X-ray made.

3/21/29: General condition same. No purpura. Stool black. Benzine plus.

3/24/29: Condition same. Occasional epistaxis in small amounts.

3/27/29: Rectal examination-irregularities in Mucous membrane posteriorly. Second transfusion. 3/25/29.

3/30/29: No improvement despite transfusion, liver and iron.

4/1/29: Patient continues to grow weaker, several attacks of Epistoxis and Hemotemsis ? blood being swallowed. Pulse more feeble. Some dyspnoea. Patient expired at 10:50 P. M.

Autopsy obtained.

Demonstration of X-ray Films

(Dr. Batchelder)

The chest plates show some irregular mottling of the lungs which might be interpreted as a beginning broncho pneumonia or an early miliary tuberculosis.

In the mastoid pictures the mastoid cells appear to be sclerosed. This might be due either to a failure of development or an old inflammation.

Discussion: During the discussion the following diagnoses were suggested:

Aplastic Anemia.
Agranulocytosis.
Infectious mononucleosis.
Purpura hemorrhagica.

Demonstration of Postmortem Material
(Dr. Clarke)

The mesenteric and retroperitoneal lymph glands are markedly enlarged. Many of them measure more than 2 c.m. in diameter. On section the cut surface is a uniform grayish yellow color. The normal lymph node markings are entirely obscured.

The bone marrow of the femur is a rather firm grayish yellow tissue much like the enlarged lymph nodes.

The spleen weighs 150 grams. It is firm and the cut surface is uniformly pinkish gray in color.

The left kidney weighs 200 grams. The cortex is greatly thickened and is opaque and white. There are white streaks running up between the pyramids.

There are numerous small areas of hemorrhage scattered through the lung substance.

Microscopic sections show the lymph nodes and bone marrow to be solidly filled with cells that have the morphology of lymphocytic cells. The kidneys, spleen, liver and pancreas also are infiltrated with the same type of cell.

This is the pathology of a lymphatic leukemia (malignant lymphoma.)

In the absence of a leucemic blood picture it may well be called an aleukemic leukemia. The last blood count recorded was taken 12 days before death. It is quite possible the blood picture may have changed during this interval.

Recent work indicates that these cells which resemble lymphocytes are in reality undifferentiated cells of the myelogenous series.

LETTER TO THE EDITOR

THE MARTYRS OF MEDICINE

A few days ago while reading an article on the beautification by the church of several personalities martyred sometime in the middle ages, an awesome chain of thoughts seized my mind relative to the innumerable people who volunteered or were forcibly martyred to the cause of medicine.

It is only in a very remote way that we can imagine the unspeakable torture people suffered when medicine was in its infancy. While we cannot but admire the courage and fortitude of the patients of those past ages who submitted to the crude practice prevailing at the time; such for example the cauterizing of wounds with red hot irons, amputation of limbs without anesthesia, etc. We cannot glorify them as martyrs because I believe they were in the same category as our present day patients and received the medical treatment prevailing at the time. But probing deeper into the matter we find that it was not only legal, but a common practice in past ages for doctors to claim prisoners for the purpose of experimentation. These poor wretches subjected to experiments analogous with the most horrible torture with no more regard for their feelings than that of a child dissecting a fly. And baring whatever criminal stain may have blemished them, modern medicine and humanity owes much to those poor wretches who were subjected to martyrdom.

As our thoughts approach closer to our present day civilization we see a vastly different and more important phase of martyrdom. We see the learned man unselfishly laboring in his laboratory in an effort to conquer some dread disease. How many of these humanitarians have sacrificed their entire lives in the effort? How many have become the victims of the very germs they sought to conquer and died in agony that the cause of medicine might live and advance. It is from these benefactors that humanity has received the most aid, and to these valient men, humanity gives the least attention. In these days of hero worship we place upon a pedestal a man who has performed a daring stunt, and forget one who has died for the cause of humanity.

BENEDICT COLAVECCHIO.

SOCIETIES

PROVIDENCE MEDICAL ASSOCIATION

The regular monthly meeting of the Providence Medical Association was called to order by the President, Dr. Clinton S. Westcott, Monday evening, May 5, 1930, at 8:45 o'clock. The records of the last meeting were read and approved.

The secretary read a letter announcing a lecture by Dr. A. D. Hirschfelder on "The Physical Chemistry of Antiseptics"; also a letter from the Retail Credit Grantors of Rhode Island announcing a testimonial dinner to Frank E. Ballou on the passage of the Small Claims Court Bill.

The first paper of the evening was on "The Management of Convalescence in Rheumatic Heart Disease," by Dr. William T. Buffum. This is the leading cause of death in girls and second in boys. Rheumatic fever practically always attacks the heart. He gave a short description of the disease and its pathology and a short summary of the treatment in the acute phase. Convalescence begins when the temperature is normal. Let the child begin activity when the clinical signs are gone. The pulse after exercise is the best criterion. The weight should increase. Always keep the work of the heart less in capacity. Allow no exercise to the point of dyspnea in the early months. Children from poor homes should have institutional care. The initial disability is usually from weakness of the heart muscle and great improvement frequently results. The paper was discussed by Drs. Wing, Sundin and Buffum.

Dr. Paul Appleton gave a talk on some technical features of modern obstetrics. This was illustrated by a long series of moving pictures illustrating practically every phase of the modern work now done at the Providence Lying-In Hospital. Dr. Partridge discussed this.

The meeting adjourned at 10:10 P. M.

Collation was served.

Respectfully submitted,

PETER PINEO CHASE, M.D.,
Secretary.

HOSPITALS

MEMORIAL HOSPITAL

Meeting called to order 9:30 P. M. by Dr. J. E. Kerney acting as chairman. Minutes of previous meeting read and approved as read.

The paper of the evening given by Dr. John F. Kenney was as follows: 1. "Guinea Pig TB." 2. "Anaphylaxis." 3. "Appendicitis investigation to determine type of causative organism." a. Acute 44% B. Coli. b. Chronic 52% B. Coli. c. Routine during operation. 33% B. Coli. Lower percentage of organisms from stump previous to cauterizing and burying.

Discussion: Dr. A. T. Jones—"Culture Media"; Dr. E. Sharp—"Anaphylaxis"; Dr. Batchelor—"A Question of Technique in Inoculation of Guinea Pigs"; Dr. Turner—"Pin Worms as Cause of Appendix"; Dr. Bertini—"Why Colored People Do Not Get Appendicitis"; Dr. Kerney spoke in praise of Dr. Rosenov; Dr. Saklad spoke in praise of work by Dr. Kenney and his associates; Dr. Kerney spoke on Possibility of Focal Especially Distal Infections as Causation Factor in Appendicitis; Dr. Chapin gave case report of Appendix Case from Focal Infection.

Dr. Kenney replied to various questions arising in discussion.

Meeting adjourned at 10:30 P. M.

STANLEY SPRAGUE, M.D.
Secretary.

ANNOUNCEMENTS

THE JOHN PHILLIPS MEMORIAL PRIZE

The American College of Physicians announces the John Phillips Memorial Prize of $1500.00, to be awarded for the most meritorious contribution in Internal Medicine and sciences contributing thereto, under the following conditions:

(1) The contribution must be submitted in the form of a thesis or dissertation based upon published or unpublished original work.

(2) It must be mailed to the Executive Secretary of the American College of Physicians on or before August 31, 1930.

(3) The thesis or dissertation must be in the English language, in triplicate, in typewritten or printed form, and the work upon which it is based must have been done in whole or in part in the United States or Canada.

(4) The recipient of the prize would be expected to read the essay at the next Annual Meeting of the College, after which he would be officially presented with the prize by the President.

(5) The College reserves the right to make no award of the prize if a sufficiently meritorious piece of work has not been received.

(6) The announcement of the Prize winner will be made not later than two months before the Annual Meeting.

American College of Physicians. E. R. Loveland, Executive Secretary, 133-135 S. 36th Street, Philadelphia, Pa.

(*By request*)

FIFTH INTERNATIONAL CONGRESS OF PHYSIOTHERAPY LIEGE, 4TH TO 8TH OF SEPTEMBER, 1930

The organization of this Congress is progressing rapidly and we would draw the attention of physicians to the real union which will take place in Liege on the occasion of the International Exposition and the Centenary of Independence.

The Congress of Physical Therapy presided over by Prof. Gunzburg and Prof. De Munter has already received recognition by twenty foreign committees, among which the French section will be under the presidency of Prof. E. Gley of the Academy; the Holland section under the presidency of Prof. Van Breeman, Secretary of the International League for Rheumatism; the Swiss section under the presidency of Prof. Rossel et of the University of Lausanne, Secretary of the International Committee on Light; the Spanish section under the presidency of Du Doyen Recasens of the Faculty of Medicine of Madrid; the section of the Grand Duchess of Luxembourg under the presidency of Dr. Schmollet Weyler; the section of Poland under the presidency of Dr. E. Faber; the Portuguese section under that of Dr. Pires de Lima de Porto; the section of the United States of America under the presidency of Dr. William Benham Snow, Editor of Physical Therapeutics in New York; the Brazilian section under the presidency of Dr. F. Barrozo; that of England under the presidency of Dr. Kerr Russell; the Austrian section under Prof. Strasser of Vienna: Germany under Prof. Grober of Jena; Hungary under Professor von Dalmady; the French Colonies in Africa under Dr. Augebaud d'Oran.

The important questions proposed are: (a) Rheumatism and physiotherapy treatment. Papers by Profs. Gunzburg for Belgium, Van Breemen for Holland, Wierzejewsky for Poland. (b) Affections of the Central Nervous System and Physiotherapy. Paper by Dr. Delherm for France.

Sections on Kinesitherapy, Electrology, Hydrology, Radiology and Actinotherapy will treat of special questions, for which about thirty authors were solicited on the 15th of September, 1929.

These sections will be organized according to the number who attend the Congress at Liege:

International Committee on Rheumatism, International Committee on Light, Curie Institute in Paris, Institute of Actinology in Paris, American Physical Therapy Association, American Roentgen Ray Society, Radiological Society of North America, Physiotherapeutic Sections of Paris, Belgium, Antwerp, Societies of Radiology of France, Poland, Belgium, French Society of Electrotherapy, French Federation of Medical States for Physical Education and Sports, Society of Hydrology of Belgium.

Acceptances may be sent from now on to Dr. Dubois-Trepagne, Secretary-General, 25 Louvrex Street, Liege, Belgium, with the dues of 150 Belgium francs. This will facilitate the organization of a Congress which will be noteworthy among the sessions of 1930.

MISCELLANEOUS

FIRST INTERNATIONAL CONGRESS ON MENTAL HYGIENE

Held in Washington, D.C., May 5-10, 1930.

Clifford W. Beers, founder and secretary of the National Committee for Mental Hygiene, announced February 11th that the First International Congress on Mental Hygiene, of which he has been elected Secretary-General, would be held in Washington, D.C., May 5-10, 1930. Mr. Beers' announcement was made from the offices of the First International Congress on Mental Hygiene, 370 Seventh Avenue, New York City.

The announcement stated that the First International Congress is being sponsored by a representative committee of mental hygiene experts, psychiatrists, educators and distinguished citizens from the following countries: Africa, Australia, Belgium, Brazil, Bulgaria, Canada, Denmark, Finland, France, Germany, Great Britain, Greece, Holland, Hungary, Italy, Japan, Luxemburg, New Zealand, Norway, Porto Rico, Russia, Spain, Sweden and Switzerland.

The Chairman of the Committee on Organization of the Congress, Mr. Beers' statement continued, is **Dr. Arthur H. Ruggles** of Providence, R. I., President of the American Foundation for Mental Hygiene and chairman of the Executive Committee of the National Committee for Mental Hygiene. The Vice-Chairmen of the Committee are Dr. Samuel T. Orton of New York City, President of the American Psychiatric Association and Dr. George E. McPherson of Belchertown, Mass., President of the American Association for the Study of the Feeble-minded.

Among the American organizations which were invited to membership in the Congress were the United States and Canadian National Committees for Mental Hygiene, the American Psychiatric Association, the American Association for the Study of the Feeble-minded, the American Neurological Association, the American Psychological Association, the American Orthopsychiatric Association, the American Association of Psychiatric Social Workers and all State Mental Hygiene Societies in the United States.

The program for the Congress was in charge of an Executive Committee on Program headed by Dr. Frankwood E. Williams, Medical Director of the (United States) National Committee for Mental Hygiene. John R. Shillady, an expert in social work organization, was appointed Administrative Secretary and general executive in charge of the Congress affairs.

The initial contribution for basic expenses of the Congress was made by the new American Foundation for Mental Hygiene whose founding was announced at the recent annual meeting of the National Committee for Mental Hygiene.

"As its name implies," Mr. Beers previously stated, "the Washington gathering will be the first international congress of mental hygiene organizations to be held. Leaders in mental hygiene work throughout the world have been anxious to get together for study and discussion of their common problems. The lack of funds to pay the cost of the Congress has now been removed through the gift of the American Foundation for Mental Hygiene. It is the purpose of the sponsors of the Congress to invite the participation of all countries and to enlist the co-operation of heads of governments, public officials, as well as private institutions, associations and individuals."

MEDICINE TURNS TO THE TALKING SCREEN AS A NEW INSTRUMENT OF SCIENTIFIC ADVANCEMENT

NEW YORK—The day when every lecture on modern surgery can be supplemented by demonstrations in sight and sound of actual operations by eminent specialists, when the surgeon performing an operation can demonstrate and explain his technique to a hundred or a thousand medical students any time and at any place, and when the library of every medical institution in the country will include "talking text-books" that will be available constantly for visible and audible reference, has been definitely advanced by the latest electrical and mechanical development in the reproduction of talking motion pictures, according to J. W. Rafferty, manager of the Industrial and Educational Department of RCA Photophone, Inc. The company represents the achievements in this field of the Radio Corporation of America, the General Electric Company, and the Westinghouse Electric and Manufacturing Company. A survey of the medical field by RCA Photophone in connection with the introduction of the first portable RCA Photophone talking picture projector reveals that many plans of great medical value are under consideration by scientific and medical institutions throughout the country.

"Originally conceived as an entertainment medium, the talking picture has now been brought to the service of medicine and science by the development of the portable photophone," Mr. Rafferty declared in the company's report. "It can now serve the specialized needs of the medical school or the institution for scientific research more efficiently and more effectively than a whole army of instructors and lecturers.

"Motion pictures have been used as aids to medical instruction in various parts of the world for the past decade. One hospital, the *Serafimerlasarettet,* in Stockholm, has used school films for medical pedagogics for fifteen years. But with the advent of the talking picture, the applications of the talking screen to medical and scientific advancement are increased a hundred fold. The medical field has been awaiting the development of portable motion picture sound projectors, ready to plug into the electric light socket and to be wheeled from room to room as required. This equipment has now been perfected.

"Plans ranging from the talking motion picture as a teaching film to be used in conjunction with lecture courses to be delivered by medical school staffs, to 'animated text-books' that would provide entirely new approaches to many medical problems are now under discusson by leading medical authorities. The extraordinary facility with which the talking film lends itself to medical instruction can best be appreciated when it is understood that 50 students watching a surgeon can see little more than their eyes and the position of their seats permit them to see. On the film, close-ups can carry the spectator to the heart of the operation. But greater than that, the talking film gives the spectator a running lecture outlining in detail the elements of the surgery. Any form of instruction or demonstration can be duplicated a thousand times in a thousand places simultaneously by use of this portable reproducing system.

"An excellent illustration of the value of the talking picture to medical education was given by Dr. S. H. Goodhardt, Columbia University Professor, whose first talking film lecture was recently exhibited at the New York Academy of Medicine. He cited an instance not long ago when he had to make a trip to Panama to appear before a medical group. Had the portable sound projector been available at that time, he said, he could have saved much valuable time and avoided absence from his duties in New York by sending a portable machine and a print of the film to make his Panama 'appearance' for him.

"In addition to its instructional value to students and members of the profession, the talking film promises to play a revolutionary part in public health campaigns. By bringing its message of hygiene and disease prevention to an audience already 'sold' on the talking picture, the talking health film can play a tremendously important part in any health campaign. Theatres, schools, clinics and clubs can each perform a distinct service in sponsoring the exhibition of such film productions.

"The applications of the talking film to medicine are almost unlimited. Medical schools having a library of recorded surgery films will no longer have to rearrange their lecture schedules to fit the program of the operating room. Any type of surgical demonstration will be available at any time, accompanied by a complete lecture delivered by the surgeon who performed the operation. Students and members of the profession can see the world's greatest surgeons at work, a privilege that heretofore was granted only to a select few. In short, medicine has in the talking film super-educator and super-demonstrator.

"The RCA Portable Photophone, the modern 'theatre in a travelling bag,' makes it possible to transform any classroom, lecture hall, clinic or parlor into an auditorium perfectly equipped for the presentation of sound-motion pictures. In fifteen minutes the complete equipment can be set up, plugged into any light socket, and talking motion pictures projected on its own screen. Accommodating as it does the regular 35 mm. film, the same that is used in theatres, it will project and reproduce any standard sound-on-film picture. The entire equipment fits into a small carrying case, and can be transported easily in a small automobile."

(From R.C.A. Photophone, Inc., N. Y.)

ANOXEMIA IN PNEUMONIA

Arthur E. Guedel, Los Angeles, Will Shimer and John M. Cunningham, Indianapolis (*Journal A. M. A.*, April 6, 1929), assert that the common error in the application of oxygen in pneumonia has been the delay in waiting for the full development of an anoxemic acidosis with dyspnea, cyanosis and a failing heart before beginning its administration. Oxygen to be of value in pneumonia must be applied early. The time to begin oxygen in pneumonia is as soon as its application will reduce the heart or respiratory rate or will provide increased rest and comfort for the patient. An atmosphere containing from 30 to 50 per cent of oxygen is adequate to eliminate the anoxemic factor in pneumonia. It should be administered as nearly constantly as possible until well after the crisis or until its removal does not produce any sign of anoxemia. The tension or dose is regulated to meet the increased metabolic requirements and the reduced pulmonary absorption activity in each case. When the application of oxygen is begun, the patient should be assured that it is not a method of last resort but a rational therapeutic measure, whether the condition is serious or not. Oxygen therapy in pneumonia to the abolition of anoxemia accomplishes the following: It provides a higher oxygen saturation of the blood and thus lessens the heart load. It supports the functions of waste combustion and cell nutrition. It supports the aerobic stage of muscle work (reconversion of lactic acid into dextrose) and thus conserves food resources. Finally, the cell, having less lactic acid thrust on it and having oxygen support for the combustion or that which it must eliminate, is kept in a more nearly normal physiologic state. The same is true of the heart. Its fatigue products are better carried away, its cells are better nourished, and its work is less. Under ample oxygen support the pneumonic heart, as well as the entire human organism, carries on better and longer than would be possible under partial anoxemia. Finally, the intelligent administration of oxygen in pneumonia is physiologically sound. Although it cannot substitute an entire treatment, it is an important therapeutic measure and should be more seriously considered.